AMENDMENTS TO CLAIMS

Please amend the claims as indicated hereinafter.

1. (Canceled)

2. (Currently Amended) A method of managing a network entity that is initiated by the network entity, the method comprising:

performing, at a management proxy, the computer-implemented steps of:

receiving a request from a management application for interaction with the network entity;

based at least upon the request from the management application, creating a management request;

storing said management request in the management proxy while awaiting a poll for the management request from the network entity;

receiving a poll message from the network entity, said poll message requesting from the management proxy any available management requests applicable to the network entity;

in response to the poll message:

selecting one or more management requests stored in the management proxy that match the network entity; and

delivering the selected one or more management requests to the network entity;

wherein the management proxy is external to the management application and the network entity;

wherein the method is performed by one or more computing devices.

3.–33. (Canceled)

34. (Currently Amended) A method comprising the computer-implemented steps of:

requesting a management gateway that is communicatively coupled to the network element to provide one or more management requests for a network element;

wherein the one or more management requests have been stored at the management gateway by a management application;

in response to said requesting, receiving from the management gateway at least a particular management request;

in response to the particular management request, initiating at the network element communication of a reply to the particular management request, via the management gateway;

wherein the management application is logically separate from the management gateway;

wherein the network element is an element of a device that does not execute the management application or the management gateway;

wherein the method is performed by ~~a~~ one or more computing devices.

35.–53. (Canceled)

54. (Previously Presented) A computer-readable storage medium storing one or more instructions, wherein the one or more instructions, when executed by one or more processors, cause:

requesting a management gateway that is communicatively coupled to the network element to provide one or more management requests for a network element;

wherein the one or more management requests have been stored at the management gateway by a management application;

in response to said requesting, receiving from the management gateway at least a particular management request;

in response to the particular management request, initiating at the network element communication of a reply to the particular management request, via the management gateway;

wherein the management application is logically separate from the management gateway;

wherein the network element is an element of a device that does not execute the management application or the management gateway.

55.–61. (Canceled)

62. (Previously Presented) An apparatus comprising:

a network interface that is coupled to the data network for receiving one or more packet flows therefrom;

one or more processors;

one or more stored sequences of instructions which, when executed by the one or more processors, cause the one or more processors to perform:

receiving a request from a management application for interaction with the network entity;

based at least upon the request from the management application, creating a management request;

storing said management request at the apparatus while awaiting a poll for the management request from the network entity;

receiving a poll message from the network entity, said poll message requesting from the apparatus any available management requests applicable to the network entity;

in response to the poll message:

selecting one or more management requests stored in the apparatus that match the network entity; and

delivering the selected one or more management requests to the network entity;

wherein the apparatus is external to the management application and the network entity.

63. (Previously Presented) The apparatus as recited in Claim 62, wherein the one or more stored sequences of instructions, when executed by the one or more processors, further cause the one or more processors to perform:

receiving a responsive management message from the network entity;

storing the responsive management message in the apparatus;

receiving a second poll message from the management application, wherein the second poll message requests any responsive management messages applicable to the management application;

in response to the second poll message:

selecting one or more responsive management messages that match the management application; and

delivering the selected one or more responsive management messages to the management application.

64. (Previously Presented) The apparatus as recited in Claim 62, wherein the network entity is within a private network that is managed by a network service provider, and wherein the apparatus and the management application are within a public network that is owned or operated by the network service provider.

65. (Previously Presented) The apparatus as recited in Claim 62, wherein the network entity is a service appliance.

66. (Previously Presented) The apparatus as recited in Claim 62, wherein the network entity is a switch or router.

67. (Previously Presented) The apparatus as recited in Claim 62, wherein the network entity is a device with which the management application is unable to directly communicate.

68. (Previously Presented) An apparatus comprising:

a network interface that is coupled to the data network for receiving one or more packet flows therefrom;

one or more processors;

one or more stored sequences of instructions which, when executed by the one or more processors, cause the one or more processors to perform:

requesting a management gateway that is communicatively coupled to a network element to provide one or more management requests for a network element;

wherein the one or more management requests have been stored at the management gateway by a management application;

in response to said requesting, receiving from the management gateway at least a particular management request;

in response to the particular management request, initiating at the network element communication of a reply to the particular management request, via the management gateway;

wherein the management application is logically separate from the management gateway;

wherein the network element is an element of a device that does not execute the management application or the management gateway.

69. (Previously Presented) The apparatus as recited in Claim 68, wherein the apparatus is a server that is logically separate from the network element and communicatively coupled to the management gateway.

70. (Previously Presented) The apparatus as recited in Claim 68, wherein the apparatus includes the network element.

71. (Previously Presented) The apparatus as recited in Claim 68, wherein the one or more stored sequences of instructions, when executed by the one or more processors, further cause the one or more processors to perform initiating at the network element communication of at least some of the report information that is responsive to the particular management request.

72. (Previously Presented) The apparatus as recited in Claim 68, wherein:

the particular management request comprises a first definition of one or more triggers, each comprising one or more conditions, and a second definition of report information; and

the one or more stored sequences of instructions, when executed by the one or more processors, further cause the one or more processors to perform:

determining that a particular trigger of the one or more triggers is satisfied, and in response thereto, initiating at the network element communication of at least some of the report information.

73. (Previously Presented) The apparatus as recited in Claim 72, wherein each of the one or more conditions comprises at least one of an event, alarm, combination of events or alarms, or pattern of events or alarms.

74. (Previously Presented) The apparatus as recited in Claim 72, wherein each of the one or more conditions comprises a state of the network element.

75. (Previously Presented) A method as recited in Claim 72, wherein the report information describes any of the triggers that were determined as satisfied.

76. (Previously Presented) The apparatus as recited in Claim 72, wherein the report information comprises any of a core dump from the network element, a configuration of the network element, state information for the network element, or a log of the network element.

77. (Previously Presented) The apparatus as recited in Claim 68, wherein the network element resides at a device with which the management application is unable to directly communicate.

78. (Previously Presented) An apparatus comprising:

a network interface that is coupled to the data network for receiving one or more packet flows therefrom;

one or more processors;

one or more stored sequences of instructions which, when executed by the one or more processors, cause the one or more processors to perform:

receiving event notifications from one or more network entities;

storing said event notifications at the apparatus;

receiving one or more poll messages from one or more subscribing management applications; and

in response to the one or more poll messages, relaying the one or more event notifications to the subscribing management applications;

wherein the apparatus is logically separate from the management application and the network entity.

79. (Previously Presented) The apparatus as recited in Claim 78, wherein the event notifications were not solicited by the management application or the apparatus.

80. (Previously Presented) The apparatus as recited in Claim 78, wherein the network entity is within a private network that is managed by a network service provider, and wherein the apparatus and the management application are within a public network that is owned or operated by the network service provider.

81. (Previously Presented) The apparatus as recited in Claim 78, wherein the network entity is one of a service appliance, a switch, or a router.

82. (Previously Presented) The apparatus as recited in Claim 78, wherein the network element resides at a device with which the management application is unable to directly communicate.

83. (Previously Presented) An apparatus comprising:

one or more processors;

means for receiving a request from a management application for interaction with the network entity;

means for based at least upon the request from the management application, creating a management request;

means for storing said management request at the apparatus while awaiting a poll for the management request from the network entity;

means for receiving a poll message from the network entity, said poll message requesting from the apparatus any available management requests applicable to the network entity;

means for, in response to the poll message:

selecting one or more management requests stored in the apparatus that match the network entity; and

delivering the selected one or more management requests to the network entity;

wherein the apparatus is external to the management application and the network entity.

84. (Previously Presented) The apparatus as recited in Claim 83, further comprising:

means for receiving a responsive management message from the network entity;

means for storing the responsive management message in the apparatus;

means for receiving a second poll message from the management application, wherein the second poll message requests any responsive management messages applicable to the management application;

means for, in response to the second poll message:

selecting one or more responsive management messages that match the management application; and

delivering the selected one or more responsive management messages to the management application.

85. (Previously Presented) The apparatus as recited in Claim 83, wherein the network entity is within a private network that is managed by a network service provider, and wherein the apparatus and the management application are within a public network that is owned or operated by the network service provider.

86. (Previously Presented) The apparatus as recited in Claim 83, wherein the network entity is a service appliance.

87. (Previously Presented) The apparatus as recited in Claim 83, wherein the network entity is a switch or router.

88. (Previously Presented) The apparatus as recited in Claim 83, wherein the network entity is a device with which the management application is unable to directly communicate.

89. (Previously Presented) An apparatus comprising:

one or more processors;

means for requesting a management gateway that is communicatively coupled to a network element to provide one or more management requests for a network element;

wherein the one or more management requests have been stored at the management gateway by a management application;

means for, in response to said requesting, receiving from the management gateway at least a particular management request;

means for, in response to the particular management request, initiating at the network element communication of a reply to the particular management request, via the management gateway;

wherein the management application is logically separate from the management gateway;

wherein the network element is an element of a device that does not execute the management application or the management gateway.

90. (Previously Presented) The apparatus as recited in Claim 89, wherein the apparatus is a server that is logically separate from the network element and communicatively coupled to the management gateway.

91. (Previously Presented) The apparatus as recited in Claim 89, wherein the apparatus includes the network element.

92. (Previously Presented) The apparatus as recited in Claim 89, further comprising:
means for initiating at the network element communication of at least some of the report information that is responsive to the particular management request.

93. (Previously Presented) The apparatus as recited in Claim 89, wherein:
the particular management request comprises a first definition of one or more triggers, each comprising one or more conditions, and a second definition of report information; and
the apparatus further comprises:
means for determining that a particular trigger of the one or more triggers is satisfied, and in response thereto, initiating at the network element communication of at least some of the report information.

94. (Previously Presented) The apparatus as recited in Claim 93, wherein each of the one or more conditions comprises at least one of an event, alarm, combination of events or alarms, or pattern of events or alarms.

95. (Previously Presented) The apparatus as recited in Claim 93, wherein each of the one or more conditions comprises a state of the network element.

96. (Currently Amended) The apparatus ~~A method~~ as recited in Claim 93, wherein the report information describes any of the triggers that were determined as satisfied.

97. (Previously Presented) The apparatus as recited in Claim 93, wherein the report information comprises any of a core dump from the network element, a configuration of the network element, state information for the network element, or a log of the network element.

98. (Previously Presented) The apparatus as recited in Claim 89, wherein the network element resides at a device with which the management application is unable to directly communicate.